



Montana Common Core Standards and Assessments

Announcing the adoption
and transition to

**Montana Common Core Standards
and Assessments**

by the Montana Board of Public Education
on **November 4, 2011.**



The Montana Office of Public Instruction will provide
on-going information, training and resources.

Website: <http://www.opi.mt.gov/MontanaCommonCoreStandards>





Standards For Mathematical Practices

Highlights



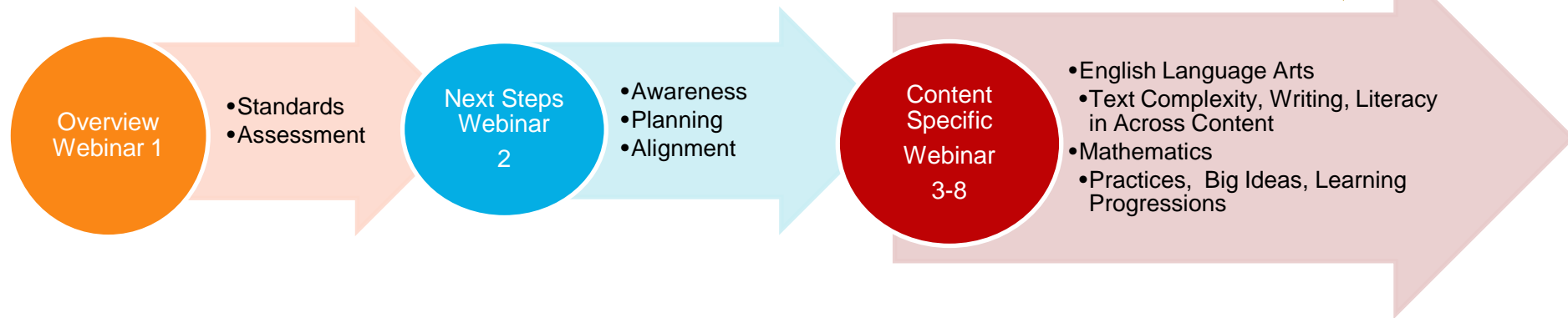
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MCCS Mathematics Webinar Series



MONTANA COMMON CORE STANDARDS & ASSESSMENT 2012 WEBINAR SERIES

Mathematical
Practices



opi.mt.gov

Spring 2012

<http://opi.mt.gov/MontanaCommonCoreStandards>




SIX MAJOR SHIFTS IN MATHEMATICS

Shift 1:
Focus

Shift 2:
Coherence

Shift 3:
**College and
Career
Readiness**



Shift 4:
**Mathematical
Practices**

Shift 5:
Application

Shift 6:
**Balanced
Emphasis**



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FOCUS, COHERENCE, RIGOR



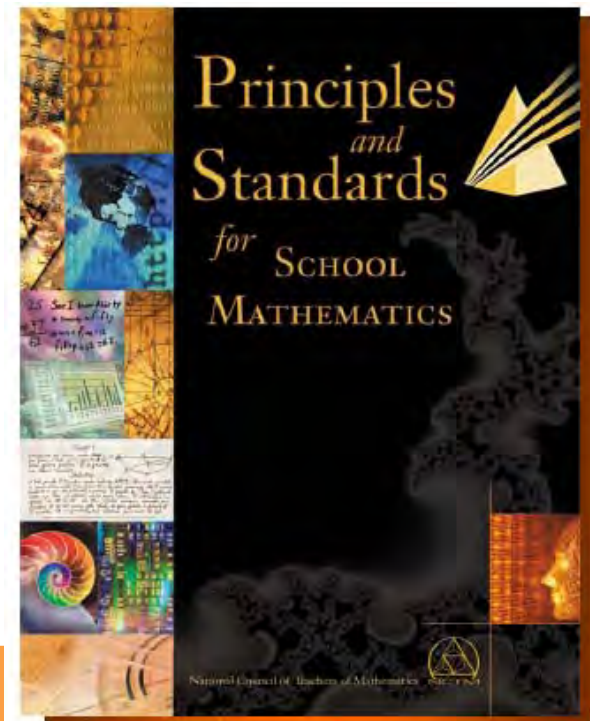
STANDARDS FOR MATHEMATICAL PRACTICE

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important 'processes and proficiencies' with longstanding importance in mathematics education.

- Montana Common Core Standards (page 6)

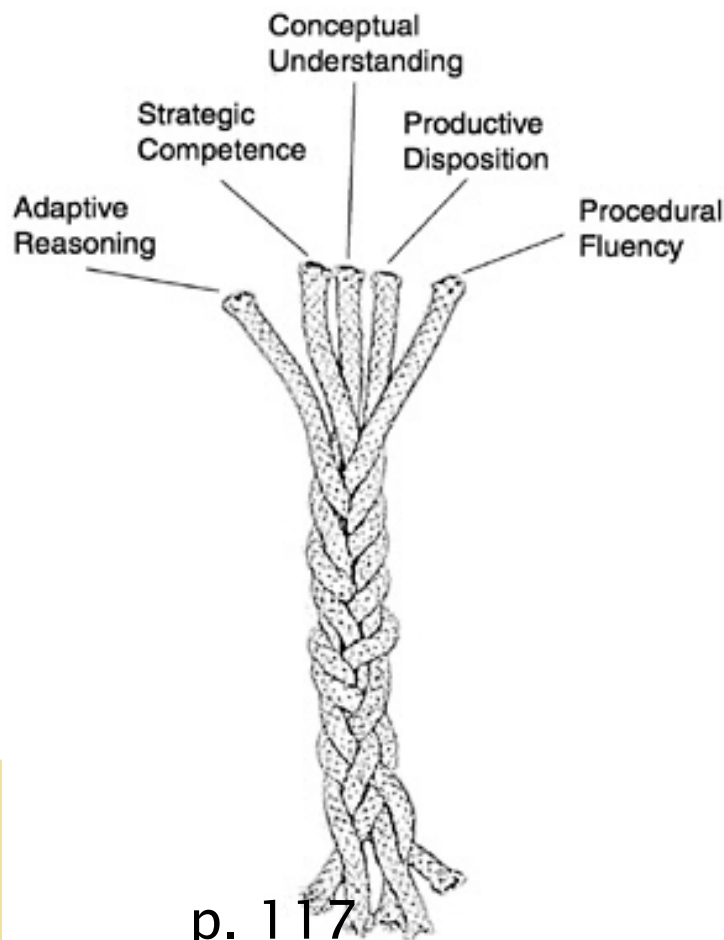
NCTM – PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS PROCESS STANDARDS

- Problem solving
- Reasoning and proof
- Connections
- Communication
- Representation

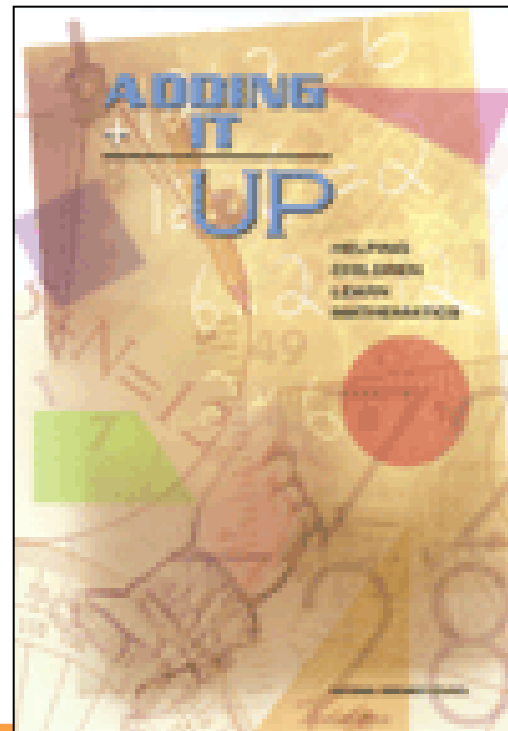


NCTM (2000). *Principles and Standards for School Mathematics*. Reston, VA: Author.

STRANDS OF PROFICIENCY OF MATHEMATICAL PROFICIENCY



p. 117



Adding It Up: Helping Children Learn Mathematics

By Jeremy Kilpatrick,
Jane Swafford, & Bob Findell (Editors). (2001).
Washington, DC: National Academy Press



STANDARDS FOR MATHEMATICAL PRACTICE

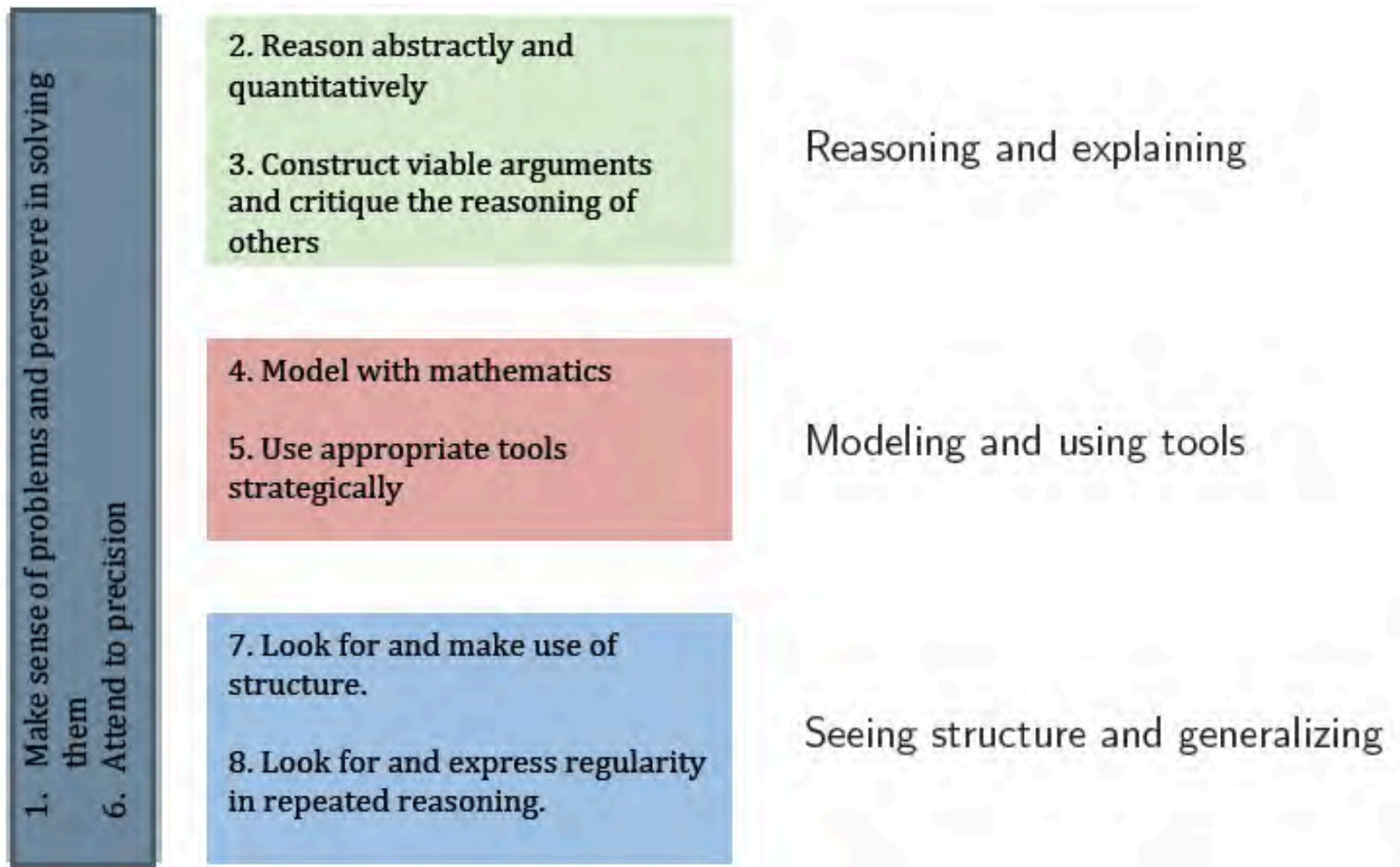
1. Make sense of complex problems and persevere in solving them.
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



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GROUPING THE STANDARDS FOR MATHEMATICAL PRACTICES



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(McCallum, 2011)

IN-DEPTH UNDERSTANDING

Professional Development Materials – Indexed by Topic

NOTE: To find MCCS sequential planning resources, please visit [Getting Started](#).

Overview	English Language	Math	Assessment	Learning Standards
Mathematics Content Series...				
Module	Description	Delivery Time	Date Created	
Math 1	Mathematical Practices:			
	Highlights Webinar	30 minutes	April 2012	
	PowerPoint	30 minutes		
	Workshop - PowerPoint 📄	3+ hours	November 2011	
	Facilitator's Guide 📄			
	Distance-Time Activity 📄			
	Reference for Distance-Time 📄			
	Reflections 📄			
Math 2	Mathematics Critical Areas and Learning Progressions:			



Spring 20

<http://opi.mt.gov/MontanaCommonCoreStandards>



A CLOSER LOOK A MATHEMATICAL PRACTICE

Oregon State Module 1, Session 4:

Part 1: Making Sense of the Mathematics

- Doing mathematics
- Examining mathematical practice

Part 2: Student dispositions and Teacher Actions

- Identify student outcomes
- Identify teaching strategies

Part 3: Looking for the Practices through Observation

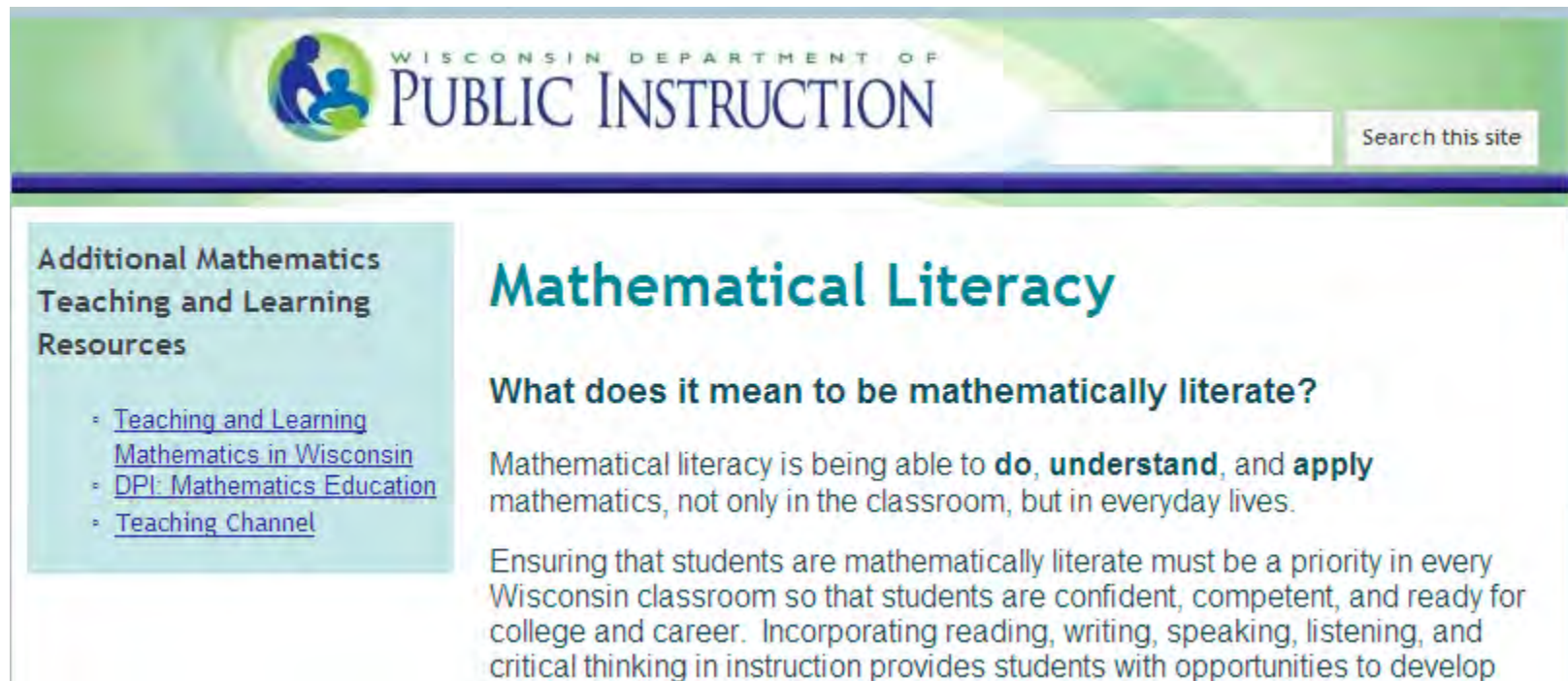
- Create your own “look for” tool
- Look for MCCS Mathematical Practice in Classroom videos



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[http://www.ode.state.or.us/
search/page/?id=3406](http://www.ode.state.or.us/search/page/?id=3406)

INSIGHTS INTO THE PRACTICES AND WHAT MATHEMATICALLY PROFICIENT STUDENTS CAN DO



The screenshot shows the Wisconsin Department of Public Instruction website. At the top is the logo with the text "WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION" and a search bar. On the left, a sidebar titled "Additional Mathematics Teaching and Learning Resources" lists three links: "Teaching and Learning Mathematics in Wisconsin", "DPI: Mathematics Education", and "Teaching Channel". The main content area is titled "Mathematical Literacy" and contains the following text:

What does it mean to be mathematically literate?

Mathematical literacy is being able to **do, understand, and apply** mathematics, not only in the classroom, but in everyday lives.

Ensuring that students are mathematically literate must be a priority in every Wisconsin classroom so that students are confident, competent, and ready for college and career. Incorporating reading, writing, speaking, listening, and critical thinking in instruction provides students with opportunities to develop

Illustrating the Standards for Mathematical Practice

Module Index

Introduction to
the CCSS
Standards for
Mathematical
Practice

Professional Learning Module Index

Powerful PD resources at your fingertips!

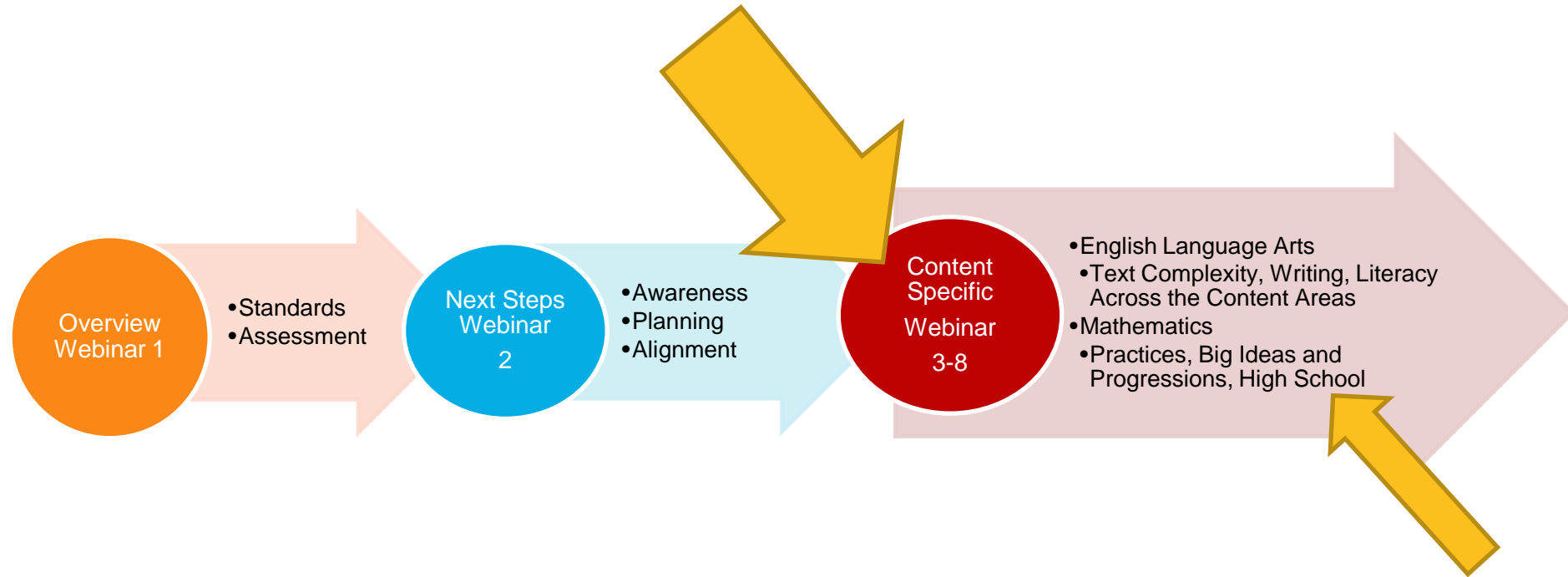
Click a button below to view resources for that module.

	K - 2	3 - 5	6 - 8	9 - 12
Problem Solving & Precision		Problem of the Month		Properties of Quadrilaterals
Reasoning & Explaining		Properties of Operations	Button Pattern	Similarity, Slope and Lines Congruence and Similarity
Modeling & Using Tools		Penny Jar	Representing Number Sentences	Comparing Linear Functions Properties of Quadrilaterals
Seeing Structure & Generalizing		Patterns with Walls	Odd Number Patterns	Sidewalk Patterns

Note: The placement of each module is intended as a quick reference to support focus but not limit use. Each of the modules

<http://www.mathedleadership.org/ccss/itp/index.html>

MONTANA COMMON CORE STANDARDS & ASSESSMENT 2012 WEBINAR SERIES





- **Try Something Now**

- Identify a task for each practice and plan instruction

- **Take A Look At Resources**

- OPI MCCS Webpage
- Oregon, Wisconsin
- NCSM Illustrating the Standards for Mathematical Practice



- **Talk About It**

- When a classroom teacher pays attention to each practice, how is student engagement and ultimately student learning impacted?



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